Magic, are the result of new bean colours and colour combinations that appeared in our garden. To me, moving with nature's artistry is diametrically opposed to combining genes to create mutants that would never occur naturally. Not only are we already blessed with all the plants we need to feed the planet, there are many more that are continually being offered for our nourishment and delight.

Aesthetic Dimensions of Seed Saving

Seed saving not only lightens our living on the land by grounding us in the reality of what completes the circle of growing, it also enhances and beautifies the garden in configurations of maturing plants that have yet to be explored in gardening books and catalogues.

The more seeds I learn to save, the more delighted I am by aesthetic rewards inherent in growing garden crops to the seed stage.

Some common vegetables, such as onions, leeks, lettuces, endives, kales and chicories become very different when they flower and then go to seed. Leaves change shape, stalks shoot skyward, flowers contrast with foliage, seedheads pop into reality; plants become hardly recognizable as the vegetables you were eating. As you get to know the colours, shapes and sizes to expect, you can incorporate your seed plants into overall garden design and even choose varieties for specific effects.

Our Russian kale seed plants have added a beautifully enriching mauve tinge to the pinks and purples of our back flower garden; the huge globular seed heads of our Elephant leeks have been regal against maturing Kamut; the candelabra-like effect of our flowering Cressonnette Marocaine lettuces has been mesmerizing in our circle garden. Now we consciously try to plan such combinations in the same way we do for more usual garden ornamentals.

There are also the unplanned combinations that appear from plants saved for seed! Seeds often escape the seed saver's attempts to collect them all and volunteer plants of favourite vegetables and flowers may pop up in new places. Sometimes these volunteers appear even earlier than greenhouse sowings and usually they are more vigorous and better adapted than pampered transplants. Often they locate themselves in spots that delight the eye and warm the heart. Ever more beautiful gardens can come from learning to anticipate and play with such gratuitous offerings.

Sowing Seeds of Freedom

We dream of a new century which heralds our unfolding consciousness as the seed itself: the unique expression of the creative potential in its most potent form, unravelling its tenderness, its vulnerability. We yearn for the return of awe and honor for life in its diverse manifestations, the scope of which our memories can barely outline from times beforehand. We demand that seeds remain their true selves: free to be passed from earth-stained hand to hand, over time and all illusions of borders, with no masters, only stewards. We are comforted that others share this dream and are committed to its realization. So be it...

~ Donna Kuprowski

SAVE OUR SEEDS, SAVE OURSELVES

Means and Methods of Embracing Our Seed Heritage

by Dan Jason

Salt Spring Seeds, P.O. Box 444, Ganges, Salt Spring Island, BC, V8K 2W1

Seed Declaration

Seeds are us, for sure
The stories of seeds are the stories of us all: the hoeings and the weedings, the waterings and the gleanings, the dances of weather and plants
The forests of trees whose breath we breathe were all once seeds
And the way seeds feed us, giving our own goodness back, along with their own
Our seeds are us
Seeds invent us no less than language, sewing together the fabric of the worlds we wear
Seeds sing deep for us, an undertoning of all our human hearts
Seeds lend us ears to hear the winds of all those mutual journeys of seed to seed
And such eyes they are, opening us to the seedy worlds we share with birds and bees and butterflies
Aye, seeds swing us right round spring to spring, as we sow them, grow them, eat them and sow them again
Our lovers they are, entering our intimate places every day of our lives
Our mothers they are, nursing us on the milk of earth so we can get to heaven
And such love bestowed on seeds, our watchfulness and waiting, our pain and endurance, our hopes and happiness
Countless generations choosing them for sustenance and delight in food and drink, for building our habitations and feeding our animals, for lighting us with joy
The diversity of seeds our diversity, the cornucopia of foods and herbs and spices, our own immensity
Our quest together the same quest: magician hitchhikers popping into newness, rooting wherever it is possible to live
Aye, seeds seed us no less than they do themselves, spinning new people out of old as the harvests repeat and repeat
Seeds, our security and abundance, a quarter of a million seeds from one amaranth seed: a handful of seeds could feed the planet in only a few seasons

spell. It is also wise to give them some additional drying in a sunny protected spot before storing them in glass jars or plastic containers. Brown chaff from the flowerheads is difficult to screen from the seeds because of similar size but it is not crucial to do so for the amateur seed saver.

Echinacea seeds will germinate better if subjected to freezing temperatures for a few weeks.

Selection Criteria

I've tried to make the particulars of seed saving as uncomplicated as they have been for myself for the past thirteen years. People without sophisticated training have been successfully saving seeds for the past ten thousand years. It is ironic that it is people with so-called scientific backgrounds who are creating the possible annihilation of seeds as we've known them.

The most sought-after trait for corporate researchers these days is the ability of plants to withstand applications of poisons produced by their corporate bosses.

On the other hand, many gardeners simply want to preserve their longtime favourite vegetables. Some growers also want to improve their crops. Nearly everyone has a different concept of what is ideal. Depending on needs and preferences, criteria for selection may include any of the following: flavour, size, disease-, drought- and/or insect-resistance, lateness or earliness to bolt, trueness to type, colour, shape, thickness of flesh, hardiness or storability. Selecting for such qualities is simply a matter of selecting for such qualities!

For most combinations of characteristics you're looking for, remember to consider the whole plant. Here at Mansell Farm, we often select for yield by saving seed of the three or four highest-producing plants. The yield of most open-pollinated crops is considerably less than it used to be because companies simply don't spend time with less lucrative non-hybrids.

We also select for taste, especially with beans and garlic. We cook three or four pots of bean varieties and compare their flavours without salt or other seasoning. For garlic we usually organize raw taste tests with groups that visit the farm; we are always surprised by how much consensus there is.

To read the few significant seed saving books available on the market might leave you with the feeling that it is crucial to maintain genetic purity. Such responsibility need be taken on only if you are officially preserving a named variety. If you grow two bean, lettuce or tomato varieties side by side, for example, and crossing does occur, it is almost certain your new bean, lettuce or tomato will taste just as good as either parent. And it might have some useful characteristics neither parent had. (On the other hand, crosses between squash varieties, for example, invariably do produce inferior fruit.)

When I first started growing beans, I never saw crosses or throwforwards. Now I usually see three to six a year and frequently receive samples from other gardeners. To me this reflects accelerated planetary changes and seems to say nature is more open than ever. Traditionally, agricultural societies have maintained a broad genetic base ("land races") for each of their crops, ensuring survival of some plants in the event of disease, pests, or freak weather conditions. With extreme and unpredictable changes in the natural and social worlds, identical plants are now more vulnerable than ever. Most vulnerable of all are the monoculture crops on the vast acreages planted by corporate agriculture.

Smaller scale farmers and gardeners, on the other hand are always in touch with their plants and have much greater flexibility to embrace changes as they occur. If nature is now throwing out more crosses and genetic sports than ever, we should receive the message and seize the exciting opportunity to grow out such plants.

Two bean selections in Salt Spring Seeds' Catalogue, *Child's Delight* and *Mansell*

Soak the berries in water for an hour, until you can remove the pulp easily from the seed. Spread the seed on a tray and keep in a warm, dry, airy place until thoroughly dry.

Rhubarb is usually grown from root sections of established plants. Not many varieties produce seed heads. The large seed disks of those that do can be gathered and dried in the usual ways.

Clonal Reproduction

Potatoes, Sunroot (aka Jerusalem Artichokes) and Garlic are saved through their tubers or bulbs. The genetic makeup of a cultivated variety of any of these stays the same although they can demonstrate quite different adaptations to soil and locale. Most people know there are lots of different kinds of potatoes but few realize there are dozens of distinct sunroot and garlic cultivars that vary in taste, appearance, productivity, etc.

Potato plants sometimes produce seeds but they normally are of no use to the seed saver since they will not produce true. Choose only healthy plants for reproduction because it is particularly easy for diseases to be passed on from one generation to the next. A few hours of drying outside toughens the skins for storage. How well potatoes keep doesn't seem to be affected by washing or not washing them. Burying them in dry sand is an excellent storage method. They should be kept in the dark.

Sunroot tubers start forming with the onset of cold weather in September or October and keep growing after the visible plant has blackened and died. Sunroots are most delicious after the first frosts hit them and remain so until sprouting begins in spring. They are tricky to store because their thin skin causes them to shrivel easily. Best is to simply leave them in the ground until you want to use them, either for food or "seed".

It is advisable to start digging inwards at over a foot beyond the stalk to avoid mutilating the tubers, which grow on lateral shoots. However, sunroots are notorious for being able to sprout new growth from even the tiniest pieces of themselves.

We are often asked if our "seed" garlic can be eaten as well as planted. Of course, food stock and seed stock are more or less the same thing although we do save our biggest bulbs for planting, both for our customers and for ourselves.

Except for eating purposes, garlic is out of the ground for only three or four months a year: it is usually harvested in late July and replanted in October. Complete details for harvesting and storing garlic are in Salt Spring Seeds Garlic Book. Not much can go wrong in those few months between harvest and replanting if you dry bulbs well after digging them. Garlic keeps better in bulbs rather than separated into cloves, so it's best to take the bulbs apart shortly before planting.

Flowers and Herbs

Flowers and herbs go to seed in numerous different ways and it's sometimes fascinating to figure out where exactly the seeds are as well as the most efficient way of harvesting them. Usually seeds are easily shaken or stripped by hand into a bucket. At times you have to get there before the birds or the wind.

Most garden flowers are cross-pollinated by insects, so if you wish to preserve the purity of a certain strain for seed saving, grow only one variety at a time, stagger plantings considerably or set up appropriate insect barriers.

Echinacea is one of our most important seed crops. It is also one of the trickiest because it's late to flower and the chaff is hard to clean. Seed of echinacea isn't ready until the flowers dry down in September or October. They slip from the central cone with a little nudge from the thumb. It is much better to harvest them during a dry

Seeds, our sign and our assurance that everything is possible in this best possible world
Seeds, our windows and our wings to future selves, to future, unimagineable extravaganzas of plants and people

Yet there are some who would take the boundless benefits and beauty of seeds and reduce them to one seed, their seed
Some who would own seeds and license their use, as they have already, who would say that all the farmers who have ever selected seed are as nothing in the scheme of things, their scheme of things
Some who would punish farmers for saving seed, as they have already done
Some who would violate the integrity of seeds by blasting other genetic blueprints into their very webwork
Some, indeed, who would kill seeds
These same would sing praises of progress, science and goodwill as they poison and eliminate seeds and people and earth
These same would infuse every morsel we put in our mouths with the frequency of fear

We must not let them do this, We must not let them do this
We must embrace seeds as never before
We must be there with seeds, for seeds must witness their incredible seed-to-seed as we do our own seed-to-seed
Let us repeat their vital statistics the way we do for movie stars and sports heroes
Let us save seeds, trade seeds, let us cherish seeds as sacred messengers from our parents' parents
Let us be at home with seeds on this earth we share as home,
Yes to their inherent expansiveness no less than to our own
No to their mad manipulation, their mindless murder by greedy, expedient power mongers
Let us declare their right to be as much as we declare our own right to be

In the name of love, seeds are us

The Big Threat and the Easy Answer

The simple act of saving seeds has lately become an extremely important one.

Unprecendented changes are going on in the world of seeds. Corporate mergers of seed growers have accelerated at such a pace that there are now only a few giant rulers. Patented seeds have become common in catalogues. Millions of acres of farmland are being planted with bioengineered seeds.

Certain transnational corporations have openly declared their intention of gaining total control of the world's food supply. As things now stand they are not far from so doing. Farmers are being taken to court for saving seed. Plants that have always belonged to everyone are now "owned" by corporations. It has become almost impossible to find food products in North America that are not derived from genetically modified seeds.

The simple, saveable seeds that are part of ten thousand years of agricultural tradition are threatened with extinction. There is everything right with these seeds and they are all we need to grow healthy food. If we don't continue to use these seeds we will lose them forever.

The pollution of seeds, our forever friends, represents to more and more people the very last straw. You can't find pure water anymore, can't breathe clean air, and now our daily meals are being contaminated beyond belief. The notion of tinkering with genes from totally different species and mixing them up in our food, with no testing, no consultation and no notification is alerting people to the fact that corporations are out of control. Genetically altered foods are being foisted on us by so-called life sciences companies in the name of health, safety and humanitarianism while in reality they are an experiment with potentially deadly consequences.

Terminator seeds are part of the arsenal of these same corporations that are promising us hope for the future. They more transparently reveal the name of the game to be profit and control. Such seeds especially threaten the livelihoods of "third world" farmers (usually women) who have traditionally saved their own seed. That minds would design seeds to terminate themselves is incomprehensible to most people. A perusal of the histories of some of these same transnational corporations is quite scary: they are manufacturers of the most virulent poisons used in warfare.

The issue of seeds has the potential to be a very big wake-up call. The confused mindset that blasts foreign genes into seeds, that patents seeds, that kills seeds, is clearly one that would destroy the very garden that feeds us.

Seeds remind us, if we but hold them in our hands, that we are a lot bigger than our current preoccupations. Wheat and barley, soybeans and sesame seeds got here because countless other people held them in their hands. They got here in a dance of people and earth that will only go on if both

Leeks are pollinated by honey bees. They may cross with onions. Generally they overwinter easily. Early tall-stemmed summer types should be hilled up with soil or mulched heavily. Rogue out and eat the less desirable plants in the fall. The second year individual plants will send up single stalks four-feet to five-feet high capped by beautiful, huge umbels composed of hundreds of flowers. In the fall, when you see the seeds inside their capsules, pick the heads and further dry them well. Brisk rubbing will extract the seeds.

Onions are also pollinated by honeybees and do cross with each other. Harvest them as normal in fall and rogue out double onions and those with thick necks. As onions are not heavy seed producers, choose twelve to fifteen of your best bulbs. Larger bulbs will produce more seed. Prepare your onions for storage by curing them as you do for your eating onions. Check that the neck area, where the tops join the bulb, is shrivelled and well dried. The best storage conditions are dry, airy and cool. Be careful not to bruise or injure the bulbs and replant them as early in spring as possible. In mild areas and especially with sweet onions that don't store well, it is better to leave the plants in the soil over winter. Cover the bulb, leaving its top barely exposed.

Large flower heads above three-foot to four-foot stalks develop over several weeks in summer. Start harvesting when the fruits open to expose the black seed. Cut off the umbels as they become ready and dry them in trays, bags, on screen or canvas, in sun or under cover, stirring them occasionally. Seed should dry to the point where it is easily rubbed from the heads. Drying will often take over two weeks. Seed life is only a year or two.

Parsnips are hardy cross-pollinated biennials that are usually planted in the spring in cold climates and in mid-summer in mild areas. As with carrots, you can choose to replant only the crowns. The mature seed is dry and light brown by the next summer and shatters, or falls off the plant readily, so harvest should not be delayed.

The other main cross-pollinating biennials are Brassicas. Brussels sprouts, cabbage, collards, cauliflower, kale and kohlrabi are all members of the cabbage family that, like broccoli, are pollinated mainly by bees and cross-pollinate readily. They require isolation from other family members and from other varieties of themselves for true seed. Unlike (most) broccoli, they must be overwintered outside or taken into storage conditions of high humidity and near-freezing temperatures. When replanted in spring, plants should be set two to three feet apart. For cabbages, it is common practice to make cross cuts about an inch deep into the top center of each head to facilitate emergence of the seed stalk. Staking keeps cabbages, which grow to five feet the second year, from falling over. Cauliflower is the most difficult of the cabbage family to raise for seed in cold climates because most varieties do not overwinter well either by indoor storage or by thick mulching outdoors.

Pods of all the brassicas burst open as they become dry and brittle, so harvesting them a little early and curing them further in paper bags or on trays after harvest is a good way to avoid losing any seed. Storage life of brassica seed is about five years.

Perennials

Chives are pollinated by bees. They don't cross with onions or leeks.

Cut off the seed heads when the seeds blacken. Allow to further dry for a few weeks, then rub off the seeds with your hands.

Asparagus is usually grown from the roots or crowns but can also be grown from seed. The seed is ready to harvest in the fall, when the asparagus berries turn red and the ferny top leaves flop over.

Cut asparagus tops off and hang to dry.

Plant seed of the following biennial root crops early enough so that the plants will be mature at the end of the growing season. When digging up plants for storage, choose healthy plants that show characteristics desirable to the variety. Don't save seed from plants that bolt to seed the first season.

It is beneficial to prepare roots for storage by curing. This is a process which dries and toughens the skin but still leaves the root firm and plump. Curing enables the root to resist moulding and heals small breaks in the skin which would otherwise invite decay. Harvest the roots on a dry day, when the soil isn't too wet. Gently shake or rub off any excess earth. Cut the tops off about an inch above the crown and then lay them to dry, either in the sun for a few hours or indoors for a day or so. Turn them once so that all parts are exposed to air.

Beets are cross-pollinated by the wind. The pollen is very light and can be carried long distances so it is best to raise seed of only one variety each year. If you bring your beets indoors, pull them in the fall before heavy frosts. Cut their tops an inch above the crown. Handle beets carefully as damaged ones may rot. Three beets are adequate for most needs.

Your storage system should provide even moisture to prevent the beets from shrivelling. A storage temperature of 40 to 50°F (4 to 10°C) favours subsequent seed stalk production more than a temperature closer to freezing. A good storage method is to layer beets in a box between dampened sand or fresh sawdust.

We always leave our beets in the ground over winter and protect them from frost with a thick layer of mulch.

In the second year, beets should be thinned or replanted to about two feet apart, the crowns even with the soil surface. In summer, when plants are completely dry with brown mature seeds, seed balls are easily stripped by hand from the branches.

As with just about any seed crop, you'll be amazed by how many seeds are produced by one plant. Beet seeds are actually seedballs, each containing up to six seeds.

Swiss Chard produces seed stalks similar to beets. Beets and Swiss chard will cross with each other, so avoid saving seeds from both crops in the same season. (Which of course doesn't prevent you from growing both for food.) Swiss chard is extremely hardy and, for seed saving purposes, there is usually no need to dig up and store the plants.

Carrots are cross-pollinated by a variety of insects. They will cross readily with Queen Anne's Lace, so it's important to keep this wild plant clipped so as not to flower when carrot does. Carrots and parsnips do not cross.

Carrots can be harvested in the fall before the ground freezes, leafy tops cut to one inch, and stored at high humidity and near-freezing temperatures. Some people cut off only the crown or top inch of the plant for replanting. They can be kept in boxes of damp sand or sawdust. In the spring, replant carrots a foot apart.

In mild areas carrots can be left in the ground under thick mulch. In cold areas they will often survive outside under heavy snow cover.

Carrots grow up to six feet high the second year. Each has a large head with a series of branches beneath it. The flower heads are given the name "umbel" to describe flower-clusters in which stalks nearly equal in length spring from a common center. Seed umbels mature unevenly; it's best to harvest when secondary heads have ripe brown seed and third-order heads are starting to turn brown. This is usually around September of the second year. Heads can be removed as they mature or entire stalks can be cut and cured for a few weeks. Rub off seeds when completely dry and use a screen to remove the chaff.

partners are honoured. They got here not by dimishing life but by letting life live.

We got here the same way. We got here because life keeps producing more diverse and divine expressions of herself, not reducing herself to sameness and certainty.

An agriculture that becomes a monoculture cannot work for very long. In North America, it worked for the second half of the twentieth century because there was a deep bank of soil for starters plus trees to hold water and stabilize the weather. Now trees are gone, soil has eroded, wells are empty and the weather is predictable only in its unpredictability.

The transnational corporations that are cramming their gene-altered crops down our throats are doing so with the same arrogance and ignorance they've shown during the past fifty years of industrial agriculture. Creating transgenic crops is an extreme extension of the belief that we can totally control nature and get away with it. But the writing on the wall has become more and more underlined for anyone who looks at the current state of our environment. It has quickly become obvious that genetically manipulating crops is the same bad science as breeding crops that only grow well with the constant application of chemicals.

Already 90 per cent of biotech firms have gone bankrupt. Most major bioengineered crops have bombed too, including transgenic tomatoes, cotton and potatoes. And genetically-modified foods have been rejected in Europe, where people have more earth-connected traditions of healthy food.

The largest corporations remain and have so much money they can say and do anything. Will we soon have only the corporate-created food that some Chief Executive Officers are promising? And if that time comes how much will that food cost us?!

Who is saying what we can do instead? We don't have a high proportion of people in North America who really care about their food. Most people don't even know where their food comes from or how it is produced. We don't have many farmers in North America who truly know that diversity works far better than monoculture. We don't even have many farmers left who know that you can't farm from the top floor of a corporate office tower.

Can we stop buying into processes and products that are designed only to make money before it becomes impossible not to? Fortunately, everything is changing as fast as today's weather. New ways of looking at things are starting to make sense. Why should food be so wrapped up by money? There is already a vast surplus of whole grains and beans being grown in North America. Why shouldn't food be a right instead of a privilege? Couldn't we all be well fed?

Why not encourage people to have a rewarding livelihood by farming the richness of the earth? ...to live on the land and derive satisfaction and fulfillment from the infinite beauty and entertainment of nature? Why shouldn't we all spread out a bit instead of

choking in the cities? ...and start to realize, as well, the vast potential for growing food within our urban environments?

What about the most radical idea of all that's starting to germinate? The Earth is pretty messed up these days but it's still likely the most incredible place in the Universe. Why should the tiniest proportion of people have all the power and resources? Why don't we go for it and try to use all our smarts for mutual benefit? Why don't we create a place where all life is honoured and cherished?

Seeds are perhaps the most potent beginning point we've got right now. They have the power to feed, clothe and shelter us. They have the power to clean our air and water. The threat of their extermination must rally us to their protection, preservation, multiplication and enhancement. For seeds to remain public treasure, we must embrace them and create agendas for them that are people-oriented rather than power-oriented.

The great news is, and we hope you will soon agree with us, normal seeds are easy and fun to save. Our remaining stock of open-pollinated seeds can be perpetuated without any special knowledge, equipment or resources. This book is about how to do so and how to do it with other people. By becoming responsible for seed saving instead of depending on governments or seed companies, we can help save ourselves. When the powers-that-be bite the dust, we will be sustaining the good earth.

So, OK, What Do We Do? Strategies for Seed Saving with Friends, Neighbours, Family and Community

Fortunately and surprisingly, it's not a gargantuan thing we must do. In fact, avenues have already been created that would serve perfectly to get our seeds back to where they once belonged, as a public resource.

Seedy Saturdays

One comes with the code name, Seedy Saturday. This annual seedy event, which usually happens on a Saturday in February or March, brings together all the people in a community who are excited by seeds. The first Seedy Saturday was in Vancouver BC in 1990 and was the brainchild of Sharon Rempel and Roy Forster. Carolyn Herriot manifested the second one in Victoria, BC in 1996. Now Seedy Saturdays have cropped up in many communities, towns and cities across Canada. They are very fun events that help preserve and enhance plant varieties that win accolades in any bioregion.They create an informal network of people who know what grows in an area and how to grow it.

It is very easy to organize a Seedy Saturday (or a Seedy Sunday or a Seedy Monday night...or to have one after harvest as well as one in spring). All you have to do is rent a hall, find a big living room or set up in a barn. Put up posters, have a story in the local paper, announce it at community meetings.

Every seed exchange that I've been to has a big swap table where people can easily look

Cucumbers are pollinated mainly by bees, do cross with one another but don't cross with other vine crops. Let the fruits ripen past the edible stage, when they will become golden, yellow or white. It doesn't matter if the vines are killed by frost. Slice the fruits in half lengthwise and scoop the pulp and seeds into a non-metallic container. Leave the mixture in a warm place and stir it a few times daily. Fermentation will reduce the jelly-like pulp around each seed to a thin liquid and will be complete in three or four days. The best seeds will sink to the bottom of the container and the lighter, inferior ones will rise to the top. Pour off the floating seeds, wash those remaining by stirring them in a few changes of water or washing them in a sieve, and then spread them on paper or screens. Dry them outdoors in sunny weather or in a warm airy room, stirring periodically to encourage uniform drying, until they feel rough but not slippery to the touch.

Squash and pumpkins are also pollinated by bees. The four different species of squash and pumpkins won't cross species or cross with cucumbers and melons. Cucurbita pepo includes all common summer squashes, all acorn types, the orange pumpkin types, Delicata, Lady Godiva and Spaghetti. Cucurbita maxima includes Buttercup, Hubbard, Delicious, Banana and Hokkaido. Cucurbita moschata includes Butternut and Cheese types. Cucurbita mixta includes the Cushaw squashes. All will cross with their own species members.

Fastening paper bags over the female flowers, then dabbing pollen from male flowers onto the female, and closing the bag again until the chance of cross-pollination is over, ensures genetic integrity. At Mansell Farm, we don't do the pollinating and tend to grow one representative of each species each growing season.

Summer squash must be left on the vine about eight weeks past its normal harvesting date until the skin becomes as hard as that of winter squash. All squash and pumpkin seed will gain vigour if allowed to afterripen in the fruit. Removing and storing them can wait for a month or two. They may be left past the first fall frost.

Cut the fruit of the mature pumpkin or squash in half. Remove the seeds and moist material around them with a large spoon, place it all in a large bowl, add some water and work the mixture through the fingers. The seeds will separate gradually. Wash them again and spread them out on paper or screens to dry for a week or more, moving them about daily so they don't remain in small wet piles. Cull out any flat seeds: only the plump ones are viable.

If kept in a sealed jar, check them after a few weeks to see if there is any sign of moisture. If so, take them out for additional drying.

Spinach has a very fine pollen which can be carried a mile or more by the wind. Rogue or remove plants that bolt to seed without producing good spinach. Spinach seed normally ripens unevenly in the latter part of summer. Strip mature seeds from the stalks with your hands.

Amaranth and Quinoa are also cross-pollinated annuals. They will cross with their wild relatives, so it is important to weed out red-rooted pigweed and lamb's-quarters if you want to maintain pure seed. Amaranth cultivars will cross with each other as will quinoa cultivars, so grow only one kind of each or separate cultivars by as much distance as you can. Certain varieties, such as purple-leaved amaranth, are easier to select for than others. Lamb's-quarters has a greater branching habit than quinoa and smaller flowerheads.

Cross-pollinated Biennials

These vegetables produce their edible crop the first season and their flowers and seeds the second season. As they need overwintering to complete their cycle, they can be left in the ground or brought indoors, depending on location and preference.

Eggplants should be allowed to mature on the plant past the edible stage. Cut the fruit in half, scoop out the seeds and wash them free from pulp by stirring them in water. They will separate and sink to the bottom. Don't ferment them but dry them immediately in thin layers on paper or screen. If, after drying, they are stuck together, rub them gently to separate them. Seeds remain viable for only a year or two.

Peppers are treated as self-pollinating annuals although they are perennials in warm climates. Most bell peppers ripen a rich red. A few fruit will supply seed for hundreds of plants. Remove the seed mass, allow it to air dry and rub it to separate the seed. Alternately, wash the seed with water in an appropriate container; the debris will float and the seeds can be immediately dried by spreading them out in the sun or in a warm place indoors.

Because self-pollinated plants inbreed automatically, you can generally use as many plants of the above crops as you wish for seed purposes. Seed from exceptional single plants, however, could be saved separately to increase the chance of retaining its special characteristics.

Cross-pollinated Annuals

For cross-pollinated plants, it is important to maintain vigour by saving seed from at least several individual plants of the same variety, even if you only need a few seeds. In any planting, cross-pollinated vegetables may look identical but some will be genetically different. Saving seed from only one or two plants, known as inbreeding, severely reduces necessary genetic contributions and results in reduced vigour and yield in succeeding generations. (Exceptions to this rule are squashes and pumpkins which do not noticeably lose vigour even if inbred for several generations.) Roguing is the term for discarding undesirable plants: it must be done before plants flower.

Broccoli is most often treated as an annual but overwintering varieties can be allowed to flower and set seed the following spring and summer. For annual broccoli, an early spring sowing is recommended. Broccoli is normally cross-pollinated by bees, so it is best to grow only one variety or isolate two or more varieties considerably. Broccoli, as a member of the Brassica family will cross with cabbage, Brussels sprouts, cauliflower, collards, kale and kohlrabi, so must not be flowering at the same time as any of these. (Which is unlikely to happen unless you are also saving seed of one or more of them.)

As for other brassicas, broccoli seed is borne in narrow pods. Harvest when pods are dry and brittle. Plant stalks can be laid on tarps or canvas for further curing outside or branches of pods can be placed in open paper bags and dried in the sun. Threshing can be done by hand, flailing or by rubbing the seedpods gently through screen. We normally snip the seed stalks and immediately thresh them by foot in our box.

Corn is cross-pollinated by the wind so isolation is essential. Any one corn (sweet, ornamental, dent, flint, flour or pop corn) will cross very easily with any other and a neighbour's corn should be at least a quarter mile away. Late and early varieties can be planted beside each other if the first variety sheds its pollen before the silks appear on the second. Harvest when cobs are dry and give them additional drying under cover. Husks of six to eight ears can be tied together and hung in an airy place. When seeds are sufficiently dry, it is usually easy to hold an ear in one hand and twist off the kernels in another. The kernels can also be left on the cobs to be displayed through the winter. Storage life is only a year or two.

Because corn is such an inbreeder, most sources recommend growing a minimum of a hundred plants to ensure genetic diversity.

over the seeds that have been contributed. But one doen't necessarily have to make a rule of this. Everybody with seeds could have their own table or everyone could just walk around with their seeds, talking and trading.

It's helpful to have a classification system on the table such as signs at different areas indicating herbs, flowers, veggies, perennials, potatoes, garlic, etc. And it's good to have as much signage as possible about the seed offerings. Some people bring their seeds in seed packets with written descriptions and some people bring jars or bags of their seeds. Remember to have lots of empty coin envelopes on the table as well as a few scoops and spoons.

Having knowlegeable volunteers at the exchange table makes things a lot more informative for neophyte growers. You can start and end at set times but you can also wait until the group energy says it's time. My favourite seed swap is at Linnaea Farm on Cortes Island, B.C., where a pot luck is combined with the seed trading: seed commerce is magically unannounced and can begin before, during or after eating!

Many Seedy Saturdays are large events with tables representing gardening clubs, local seed companies, conservancy groups, alternate energy advocates, etc. Display tables can have seed saving equipment and information. Catalogues of companies and organizations promoting open-pollinated seeds can be available for perusal. Beverages, snacks or meals can be made from locally-grown heritage crops.

Participating in an annual seed exchange can alter your garden planning profoundly...such as in- Didn't Mary say she would bring her broccoli seeds again? or How awesome that I will be spreading around the neighbourhood those vibrant calendulas that volunteer all over my own garden.

Such exchanges enable you to carry the enthusiasm of the community along with your own garden enthusiasm.

Family, Friends and Neighbours

Family, friends and neighbours can swap seeds any time they want. They can trade lettuce and kale seeds just like they trade lettuce and kale.

This is nothing new but it could be happening a lot more. As gardeners realize they can save seeds and don't have to depend on seed companies for them, this empowered feeling will become contagious.

Friends and family can be of course nearby or far away for sharing seeds and the lore of the plants they produce. Every grower has personal favourites and every garden has different crops that usually grow the lushest. A natural way for highest-quality seeds to get around.

Trading seeds with your aunt Thelma halfway across the country creates seed security in these weird years when one season can have record heat and another record cold. It means that she might be able to give you corn seed this time around but it may be your turn to help her next. If Thelma's ex is

also trading seeds with both of you, then it's even more likely that someone (and thus everyone) will have corn seed.

One of the great things about maintaining seed varieties amongst a circle of people is that, barring crop failures, you need only one member to grow lettuces, tomatoes or peppers to ensure everyone's seed supply. And such is nature's seed bounty that one lettuce, one tomato and one pepper from that one person theoretically could provide everyone's seeds, with some left over. When you consider that lettuce, tomato and pepper seeds easily stay viable for five years, it becomes obvious how simple it can be for a small group of people to keep lots of seeds alive.

As with Seedy Saturdays, there are many ways of organizing your exchanges, depending on who and where you are. You could visit each other, mail each other seeds for New Year, set it all up at conference calls, pass on the word with e-mail, make a four year plan, unite parts of the family here and there.

You could each have certain varieties for which you were responsible or you could alternate. You could all be tomato seed savers.

You could share zeal, do evaluations, make selections.

Some families, friends, neighbours are doing it already. Gardeners do it naturally. In our local post office, no one ever decided to make it happen; nevertheless six women employees have been trading fruits, vegetables, flowers, plants, cuttings and seeds for many years.

Seed Organizations

There are national seed organizations in Canada, the U.S, Australia and some European countries that research, catalogue, preserve and distribute "heritage" seeds.

Having been involved with these groups over the years plus selling old varieties through Salt Spring Seeds, I have observed recent changes in the meaning of "heirloom" or "heritage." There was for awhile agreement that such seeds had to have been around fifty years or more to merit the title. But now, our entire heritage of seeds is in fact being threatened by corporate seeds that you can't save. Up until the 1990's, many excellent open-pollinated crops were developed by companies and governments working to actually improve crops (instead of to resist herbicides or grow well with high chemical inputs). These cultivars are as worthy of saving as their older parents and are coming to be included as heirlooms too.

In the same context, it is important to note that the meaning of "hybrid" has changed as well. Fifty years ago, hybrids were the results of simple crosses that either happened spontaneously in nature or were facilitated by gardeners or researchers. Such hybrids were stabilized by growing them out over a number of seasons after which you could expect to get the same variety year after year by saving seed. Now hybrids refer to plant cultivars with parent lines controlled by plant

Plant Types and Specifics

Let's go through all of the seed crops at Salt Spring Seeds but this time classify them as to when they go to seed as well as if you have to worry about the seed staying true.

First a few definitions:
-Annual plants flower and mature seed in the same year.
-Biennial plants are normally harvested as food in their first summer or fall but do not flower or produce seed until the next year. In mild coastal or southern areas, biennials will survive the winter under a cover of mulch. In most of continental North America, biennials must be dug up and carefully stored elsewhere during the winter to be replanted in the spring. Most biennials become tall and bushy when going to seed, taking up more space than they did the previous year. They can be thinned or transplanted to twice the usual spacing.
-Perennials live and bear seed year after year.

Self- vs. Cross-Pollination

Pollination is the process by which pollen grains are carried from one plant part to another.
-In self-pollinated plants, this process occurs within each flower, with no pollen being transferred from one flower to another, either on the same plant or between plants. Such flowers have both male and female plant parts and pollination occurs successfully within the single bloom. The seeds of these plants almost always retain the quality of the parent seed, or stay "true." Because they rarely cross with another variety of the same species, isolating them is unnecessary unless absolute purity in a strain is desired.
-Most other familiar vegetables are cross-pollinated—the pollen from one flower fertilizes another flower, either on the same or another plant. The pollen is carried by either wind or insects. It is important to know the other varieties of the same species with which a plant has the potential to exchange pollen. Allowing only one variety of each potentially cross-pollinating vegetable to flower out eliminates the need to separate plants from each other. As well, barriers can be erected or planted, plantings can be staggered or crops can be covered with garden fabric, such as Reemay.

Self-pollinating Annuals

Many of these have already been discussed in detail: beans, grains, lettuces and tomatoes form the bulk of the fun for us Salt Spring Seeders. It is so easy to save such a diversity of them.

There are three kinds of beans that, because of their more open flowers, can be pollinated by insects as well as by themselves: runner beans, fava beans and lima beans. If you have an active bee population, you might see a new bean colour when you grow out your saved seeds. To maintain purity in these bean families, it is best to grow only one variety of each or to separate them as much as possible.

You can occasionally get surprise seeds with other beans and it's hard to know whether a cross has occurred or a genetic throwback. I call these "throwforwards" because they can be most interesting to grow out. You can lessen the already remote chances of such offerings by alternating bean rows by families or maturity dates.

Favas ripen over a longer period than most beans. The pods at the base of the stalk blacken first. The home gardener can wait to pick until half the pods have dried black—usually by the end of July. It takes several weeks for all the pods to dry, necessitating two or three pickings.

We've yet to get a lettuce or tomato cross at Mansell Farm but it's adviseable to not allow undomesticated lettuce varieties, such as Wild or Prickly Lettuce, to flower nearby.

For some heading varieties of lettuce, such as Iceberg and Great Lakes, it helps, after the heads mature, to peel back the head leaves to expose the growing point and liberate the flowering stalk.

Quinoa

It is worth noting here that quinoa, a plant similar to amaranth in many ways, is harvested like most of our other crops. It is ready to pick when the leaves have fallen, leaving just the dried seedheads. Seeds can be easily stripped upwards off the stalk with a gloved hand.

It is adapted to conditions of such low moisture that, if rained on, the mature seed can germinate. So sometimes we harvest quinoa just a little early if it is almost ready and extended rainfall is forecast.

We don't bring other crops indoors to complete their drying except at the very end of the season or if birds are significantly munching away. We do this by pulling entire plants and hanging them upside down in our greenhouse. As long as the crop is close to maturity, the seeds will continue to ripen.

So, there you have our seed saving methods at Salt Spring Seeds. The above is pretty much how we gather all our seeds. It might be worth repeating, embellishing and slightly altering a few comments in summarizing harvesting and storing methods for smaller-scale seed saving:

General Harvest Notes

Seeds of most plants dry right down in field or garden. However it is a good rule of thumb to let harvested seed dry for at least a few more days after being removed from the plant. The larger the seed, the longer the drying period required. Most seeds will dry adequately for home storage if spread on trays, plates, waxed paper or screens in an airy place for a few days to a week. They should be turned and spread several times during that period.

An equally good drying method is to let the seed heads or stalks dry in open paper bags for one or two weeks. The drying process can be hastened by spreading the seed in a sun-exposed room, in a non-humid greenhouse or in the sun outside if it is covered or brought in at night. Lacking sun and/or greenhouse, you can speed up drying with gentle heat so long as the temperature never rises above 100°F (38°C).

General Storage Notes

Seed should always be stored under cool, dry conditions. Temperatures well below freezing will not harm seeds if they have been adequately dried. Viability is increased by sealing most seeds from air, except in the case of beans and peas, which like some "open air."

Most sound vegetable seeds, if stored properly, will remain viable for many years, with the exception of short-lived onion, leek, corn and parsnip seed.

Put each kind of seed into its own envelope with the cultivar name and the date of storage. You can also put envelopes or simply the seeds in airtight tins, glass jars or plastic containers that can be closed to make them moisture proof.

Longevity can be increased by storing seed containers in the freezer.

I've not mentioned a lot of crops yet and these are coming up. Apart from the actual picking, processing and preserving of seeds, it is most helpful to know if a crop is an annual, biennial or perennial and also if it is self-pollinated or cross-pollinated. In the next section, each seed crop is discussed as to how it fits these classifications.

breeders. Such varieties have not been stabilized and their seed is mostly worthless for seed saving purposes. It is necessary to go back to the seed company for such hybrid seed.

So the seeds that you can obtain from heritage seed exchanges aren't necessarily very old, but they are all open-pollinated, ie non-hybrid, in the modern sense of the word. Seeds do come true and members are encouraged to save them. The vitality of the organizations is dependent on the number of members not only growing out seeds but re-offering them as well.

The seed savers organizations in Canada and the US. send all members an annual descriptive listing of who has seeds and who wants seeds. No fee is charged except to cover postage.

Through their publications, members of these groups learn not only about seed saving but also about heritage gardens and seed companies as well the stories of heirloom cultivars. These organizations maintain and formalize our living legacy of diverse plant resources:

Seeds of Diversity Canada, PO Box 36, Station Q, Toronto, ON, M4T 2L7

Seed Savers Exchange, 3076 North Winn Rd, Decorah, IA, 52101, USA

HDRA Seed Library, Ryton Organic Gardens, Coventry, CV8 3LG, UK

The Seed Savers' Network, PO Box 975, Byron Bay, NSW 2481, Australia

Seed Companies

Some companies in the U.S. and Canada still specialize in open-pollinated seeds. Salt Spring Seeds has traded seeds with many of these companies over the years and I have delighted in the spirit of openness and cooperation that has always permeated the exchanges.

Recently (in late 1999), a coalition of seed companies has come together out of concern for the potential risks associated with the present use of genetic engineering. Member seed companies, including Salt Spring Seeds, endorse the following Safe Seed Pledge:

Agriculture and seeds provide the basis upon which our lives depend. We must protect this foundation as a safe and genetically stable source for future generations. For the benefit of all farmers, gardeners and consumers who want an alternative, we pledge that we do not knowingly buy or sell genetically engineered seeds or plants. The mechanical transfer of genetic material outside of natural reproductive methods and between genera, families or kingdoms, poses great biological risks as well as economic, political and cultural threats. We feel that genetically engineered varieties have been insufficiently tested prior to public release. More research and testing is necessary to further assess the potential risks of genetically engineered seeds. Further, we wish to support agricultural progress that leads to healthier soils, genetically diverse agricultural ecosystems and ultimately people and communities.

How likely are you to find genetically modified seed in a garden seed catalogue these days? Fortunately, the answer still is "Very unlikely." This contrasts with the extreme likelihood of obtaining food products that derive from gene-altered seeds. Most development and planting of bioengineered crops has so far been with corn, canola and soybeans. Vast acreages are being grown with these and if you look at the label on any packaged food in the supermarket, you'll find it virtually impossible to find something that doesn't contain some form of them.

If you start seeing gene-modified seed in catalogues, it will be much more expensive than regular seed. We receive more than thirty catalogues annually and so far I've seen only the transgenic New Leaf potato offered. You could tell your favourite seed companies you'd be more likely to remain a customer if they didn't go in for biotech seeds.

Gardening Magazines

There used to be only two or three gardening magazines on our local newstands but now there are two or three dozen. Quite a few of these have started providing a seed exchange section where subscribers list seeds they are offering or requesting.

Catching Seeds on the Internet

The Internet is another medium that is coming on fast to proliferate our oldie but goldie seeds. There are all kinds of postings on the Internet of seed exchanges, seed foundations, seed banks and seed custodians.

Seedy Individuals

Individual seed savers can and are making huge differences with their own initiatives. Farmers' Markets are great venues for turning people on to heritage seeds and plants. Grocery stores and markets can be convinced to carry heirloom, open-pollinated plants. You can generate substantial income by being the one to grow these potted plants. Having descriptions and background as well as taste samplings with the plants adds to the excitement and to the sales.

Through the simple process of selecting for desired traits, plant lovers can improve our old cultivars. It used to be that seed companies did such selection as a matter of course and would rogue out plants that weren't high yielders, for example. But now seed companies are basically seed merchants that buy seed stock from the big boys who see little profit in improving simple, saveable seeds. So it's up to us to enhance as well as maintain our seed stocks.

All these various and creative ways of honouring and cherishing our legacy of seeds! There is much going on in the world of seeds that is working towards a revivification of our daily meals but a lot more needs to happen. This is what will work against the onslaught of Terminator Seeds and Frankenfood: people communicating to each other and sharing what is good.

The next thing is to pour the clear water and the seeds onto one of our small screens. It's a skill to do this in one go. Usually a few seeds will be left in the pail and it will be necessary to add some more water and do another pour.

The seeds tend to clump up on the screen. Spraying with the hose gets them evenly spread for faster drying.

The seeds dry remarkably fast. On a sunny day, if you put them on the screens in the morning, you can be storing them away in the late afternoon.

I come in the middle of the day when the seeds are already mostly dry and scrape them gently off the screen with their plastic marker so as to aerate them a bit more. I also rub them between my fingers so as to separate seeds that are stuck together.

The seeds turn a very light colour when dry. They look and feel dry. Some sources of seed saving information say to let them dry for two weeks (as they do for lettuce seed) but I feel that one sunny day in the greenhouse is sufficient. I've seen lots of tomato mold but have yet to see any moldy tomato seeds.

Our dry tomato seeds get poured one last time into the buckets (which have been drying themselves, upside down on the highest greenhouse shelves) and then funnelled, like our lettuce seed, into small containers. They too easily remain viable for five years.

Cucumbers are our only other crop that goes through anything like a fermentation process. Other seeds that are contained by the "fruit" of the plant, such as peppers, eggplant, melons and squash are simply scooped onto drying screens.

For most of the rest of our seeds the method of saving them is similar to how we obtain bean and lettuce seed. Our grains are threshed by feet in our wooden box and it takes a few minutes longer to rub hulls off than it does to pop pods. The threshing box works very fast and efficiently for the likes of flax, kale and lupine seed. Our flower and herb seeds are plucked, shaken or tipped into the buckets when the seedheads have totally dried and then they get a further drying followed by spritzing and/or sifting and yet a further drying.

When you collect flower and herb seeds, you quickly discover that, despite the plants being spent, seedheads are action central for an amazing host of insects. I recommend an outdoor space for first putting seeds on drying screens or trays instead of having all the bugs skedaddling in your house!

Amaranth

The only seeds we collect while plants are still flowering is amaranth. I have found over the years that it is more practical and efficient to get amaranth seeds before the plants die down.

Amaranth keeps going until hit by the first hard frost. Seed will often ripen many weeks before that, usually after about three months. The best way to determine if seed is harvestable is to briskly shake or rub the flower heads between your hands and see if seeds fall readily. (Numerous small and appreciative birds may give hints as to when to start doing this.)

An easy way to gather ripe grain is, in dry weather, to bend the plants over a bucket and rub the seedheads between your hands. My own preferred threshing method is to carefully stack bunches of cut flowerheads, then rub them through screening into a wheelbarrow; I then blow away the finer chaff using the air compressor. Cutting and hanging plants to dry indoors does not work very well: the plants become extremely bristly and reluctant to release seeds.

Harvesting fresh seed from still flowering plants means seeds still have drying to do. It's most important to further dry your crop to ensure it won't mold in storage. I usually leave amaranth seeds on trays for three hot days, stirring occasionally until they are as dry as possible. Store seed in air-tight containers in a cool dry place.

After gathering, the lettuce seed is taken to the drying room where it is poured and spread onto plates, pans or bucket lids. The freshly-harvested seed usually comes with a little fluff and flower parts. The fluff gets quickly dry in the heat of the greenhouse.

After a few hours the seed is put back into the buckets, rubbed between the fingers to release the fluff and given a fast but careful spritzing with the air nozzle. Then the seed is poured onto and sifted through the appropriate screen back to its drying spot. Presto, the seeds are clean and will be ready to be put away the same day if there are a few more hours of heat left. Otherwise, we will let them hang out in the greenhouse for a few hot hours the next day.

Again, identifying labels accompany the seeds at each step until the sticky labels are put on their containers. These are usually small jars or plastic boxes since lettuce seeds take up such little space.

Our big plastic pails, strangely enough, are used to transport the seeds. Their malleability enables them to be bent at the top to create a convenient pouring spout. I cup my right hand around the jar and with my left I pour the seeds through the funnel thus created. At the end I do a short drum flurry on the pails to make sure every last seedy character is out of the bucket.

That's the lettuce seed story here. And as simple as this is, the amateur seed saver could, as I said at the beginning, simply pluck some seed heads, make sure they're quite dry and store them in a dry container in a cool place.

Lettuce seeds stay viable for many years. I have successfully sown five year old seed.

Tomatoes

Saving tomato seed can be totally simple too: as elegantly easy as scooping a few seeds that slurped out of the homegrown tomatoes you were cutting and then putting them on a window sill to dry.

There is an accepted tomato seed saving method however that is slightly more complicated. No one has yet convinced me of its total necessity but I do it anyways because the few serious seed saving books say you should. Letting ripe tomatoes ferment for a few days is supposed to prevent certain bacterial and viral diseases from persisting through the seed. (I wouldn't save seed from any tomato that was obviously diseased.)

Actually, fermenting tomatoes turns tomato seed saving into quite a juicy ritual.

We pick the tomatoes when they are really ripe in (you guessed it!) our large plastic ice cream pails. Then we bring them to the drying greenhouse. We kneel on the grass outside the greenhouse and proceed to squish from the pulp as many seeds as possible, both seeds and pulp staying in the bucket. (One soon finds out that cultivars vary considerably in their pulpiness.)

Mushing and squeezing done, we get the garden hose and add a little more water so that all seeds and pulp are in the bath. As we're doing this we're watering seeds off our hands into the pail so that nary a seed is around when we're scrunching the next variety.

Then we put the lid on, making sure our plastic marker with the name in indelible ink has not been left on the grass. The bucket goes on one of the lower shelves in the greenhouse and we repeat the process for all the tomatoes varieties we've just collected.

Three days later we come and observe the moldy, fermented brew. (You're not supposed to let the fermenting process go on much longer.) We take the bucket outside and begin hosing back into the liquid whatever seeds are still attached to the tomato meat. As we do this we discard the pulp over the side to be later composted. After the tomato pieces have been rinsed we pause for a few seconds as the last of the seeds sink to the bottom.

Then we gently pour the liquid out of the bucket and watch all the remaining bits of skin and flesh float over the edge. TaDa! There are all the tomato seeds on the bottom! It can take a couple of tippings to get the liquid to come completely clear.

Seed Saving Procedures at Salt Spring Seeds

Tools and Equipment

If you visited Mansell Farm, you'd probably be surprised at how unsophisticated our seed saving operation is.

We have a medium size greenhouse where our seeds are taken after they are picked in the field. It's just an ordinary wooden frame greenhouse, measuring 12 feet by 22 feet that has lots of open wooden shelving.

The greenhouse serves as our starting place for transplants in the spring. We try to get everything into the ground by mid-July when the structure converts officially to drying space.

By August, various kinds of seeds to be stored are occupying various kinds of screens on the shelves, usually for only a day or two before they are threshed, cleaned, given additional drying time and then put away.

Our drying screens are mostly of two sizes, 2 by 3 feet and 1 by 1 foot and are fabric screen sandwiched by a perimeter of screwed-together wood.

We also have an assortment of sifting screens of different gauges, obtained from hardware stores, garage sales and friends. In actual practice, we use only a few of these to separate seeds from chaff and debris.

Sitting in one corner of the drying greenhouse is our little air compressor. In terms of expense, it is our one major tool, having cost us $300 new. It has a blow nozzle attachment that squirts air under pressure. We use the air compressor to separate seeds from chaff for most of our crops. It does this remarkably quickly and efficiently because viable seeds are mostly heavier than the pods, hulls and other accoutrements that come with seed gathering.

We could survive however without the air compressor by using screens alone or by blowing away the chaff with a fan or hair dryer or even by winnowing the seeds in the wind.

Then there's our threshing box. This is a 2 by 3 by 1 foot high wooden box that has thin wooden slats screwed to the bottom for extra abrasion. We thresh with our feet all our beans and grains in this box plus all other seeds that are borne in pods, such as kale, flax and lupine seeds. Once you get the technique down, it takes less than a minute to crush and pop from their pods a box full of seeds and only a few minutes to rub the hulls off grains with your feet.

We also have lots of plastic (11 litre) ice cream pails, obtained from local stores for 50 cents each. We collect seeds in these, store seeds in them and we also use them to clean seeds with the air compressor after threshing.

We also employ the ice cream buckets to ferment tomatoes. This is the only part of our seed saving operation that requires water and we do have a water faucet in the greenhouse.

That's about it for seed-saving equipment, except for indelible marking pens, labels and various containers to store the seeds.

Techniques

So come to Mansell Farm and see what we do during our long seed saving season, bearing in mind that we're processing seed for six thousand customers.

First off, we have hundreds of seed varieties that come in pods. These include all the legumes we grow, such as regular beans, runner beans, peas, favas, chickpeas, soybeans, tepary beans, lentils and limas. Depending on variety, these dry down from July to October. Generally our focus is on those varieties that mature the earliest and we encourage our customers to grow those cultivars that will dependably dry down year after year in their gardens.

In the process of drying down, all these legumes lose their leaves until only the pods are left. Most get to the point where the beans rattle in the pods if you shake them. Some beans pods twist open and spurt their seeds on hot days, so it's important to do daily checks when harvest is close. If your thumb nail can't make a dent in the seed, the beans are defintely ready.

We pick the pods by hand, gathering them

in our buckets and take them to our drying greenhouse where we spread them on the larger screens. Although they could be threshed immediately, we usually give them another drying day or two in case some seeds are not quite done.

After a hot day in the greenhouse, pods of most varieties will pop open with little pressure. Depodding them in the threshing box is no arduous affair: it's mostly a stepping process with the occasional shuffle to make sure you get all of them.

There are certainly alternatives to the threshing box. The seeds could be foot threshed in a tarp or in a burlap bag on any hard surface. Some sources recommend using a stick to thrash the beans. You could hand squish the pods quite quickly..gloves recommended. (This latter is actually closer to kneading; squeezing and cracking the dry pods with the fingers, the shelled beans quickly go to the bottom and the split pods stay on top.) Opening the pods one by one can be a very exciting as well as mesmerizing activity and is what I used to do before I made the threshing box.

Ambulating in the threshing box can also be quite thrilling. For us here at Mansell Farm, the satisfying crackling of the pods is followed by the squirts of compressed air that blow out all the open shells. In less than a minute, the sea of pods and pod pieces are out of the box and the beans are revealed in all their vibrant colours and designs.

Using the air nozzle to blow the debris from the seeds does take a bit of expertise. It's one of those skills you learn very quickly however if you don't want to spray the beans out of the box along with everything else. The air pressure goes down as you use it and builds up again if your finger is off the trigger. So you learn to adjust your distance.

There are other techniques that are almost inevitable if you go the air compressor route. Quick hand movements with the nozzle can really jiggle the chaff and get it up and away. Tilting the box enables the pods to be brisked away by the air currents.

Our plastic pails lend themselves even more efficiently than our threshing box to seed cleaning with the air compressor. If you don't fill them more than a third full (you want to have some of the bottom exposed when the pail is tilted towards you), you can create a great whirlwind effect that grabs everything except the seeds. Combining this with an intermittent up and down motion on the bucket, gets beans cleaned very quickly.

Lately, speedy person that I am, I've taken to doing most of the nozzle squirting in the box, pouring the remains from the box into a pail and then finishing the process in the pail. This probably saves a minute or two. (But we do have many hundred bean varieties.)

When the beans are clean, they go back on their screen, either by upturning the box (it has handles at either end) or by pouring them out of the pail. Then they usually have another warm day of drying before being put away.

Once bean drying time is in full swing, the greenhouse is usually a rich and changing feast for the eyes as the dance of musical beans goes on and on.

It most cases, it's probably unnecessary to give the beans additional drying time after threshing and cleaning, but I've made it standard practice as a precautionary measure. It's easy to spot beans that aren't quite finished drying: they are slightly larger and their colours aren't as deep.

Having the shelled beans on the screens also facilitates rogueing of broken, munched or otherwise suspect beans. We usually get one hundred per cent germination with out beans because every tray is carefully inspected.

Even though we know our bean varieties very well, their identifying stick or marker always accompanies them. When they are put away in their buckets, glass jars or other containers, they get a sticky label with the date. We use the ice cream pails already mentioned to store most of our main bean cultivars.

Our seed storage place is an old country summer kitchen that stays cool and dry. The snug lids make the pails quite airtight but beans actually like "breathing" once in awhile, something our beans have ample opportunity to do with all the packaging that goes on.

We don't worry about our beans being subjected to cold winter weather. If they are adequately dry, frost does no damage. On the other hand, freezing temperatures kill any insects that have managed to hitchhike rides with the seeds.

Kept cool and dry, beans will easily stay viable for four or five years. Salt Spring Seeds always mails out the current year's stock of seed but we often plant older seed here at the farm. For seed preservation purposes, you'd be safe growing out a variety one year out of four.

So, that's pretty much our bean story, in terms of saving them, here at Salt Spring Seeds. They take up a lot of our time because we maintain so many different kinds and varieties but they are certainly easy. How much more so for the home gardener wanting to grow and maintain a few favourites who can afford the leisure and pleasure of shucking them by hand.

Lettuce

Let us check out our lettuce scenario now. Lettuces are easy too. Like the beans, and as for many crops grown in temperate climates, maturity dates are quite significant. Many gardening catalogues proudly advertise that their lettuce cultivars are slow to bolt. That's OK if you want to be dependent on seed companies every year but for the seed saver, it's definitely not too fruitful.

If you want to be a saver of lettuce seed, it's best to find those cultivars that produce the kind of lettuce you want but also produce seed before the plants are frozen or rained out. In short season growing areas, it might be necessary to start lettuces early indoors. With a good mulch, it's also possible to overwinter young lettuces in some places. Most of our lettuce seed is collected in September and October.

Lettuces are quite different than beans in the manner that they complete their cycle. They don't dry down, they grow up. They put up a flowering stalk that can end up being waist high and as they do so the leaves become shrunken versions of their former selves. The candelabra-like appearance of many cultivars is so attractive that we now take their aesthetic appeal into consideration when planning the garden.

A single lettuce can produce hundreds of small yellow flowers atop its stalk. The flowers become bunches of feathery little seed sites, each flower creating eight to fifteen seeds. The seeds are a miniature version of dandelion seeds, having a tiny parachute perfect for riding the breezes. They are little wedges about an eight of an inch long and are either white or black, depending on variety.

Someone wanting to have enough seed for the coming year could simply pluck two or three fuzzy seedheads to easily get a couple of dozen seeds. But we come with our buckets. Even for us, eight or ten plants is sufficient to provide all the seeds we need.

The seeds ripen over several weeks and when they start there are still lots of blooming flowers. We usually wait until a third of the seeds are ready and collect them when conditions are dry as possible.

As with most seed harvesting, people will automatically have different approaches. The plants can be rubbed between the hands or be tipped into whatever container you're employing and shaken to release the seeds. What I do is rub the seedheads between the thumb and forefingers of my left hand while holding the bucket under them with my right. After doing this for a bit, I then bend the part I have done into the pail and vigorously tap the branches back and forth against the sides. This releases seeds that have not yet fallen.

Pleasureable components of lettuce seed gathering can easily escape mention here-namely the rhythmic tappity tap tap tap of seedheads against the bucket and the satisfying thwack of the lettuces-to-be hitting the bottom.